Victor Clube

Global Warming and the Disallowed Protestant Calendar

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(Transcribed from the recording by Ami de Grazia)

VICTOR CLUBE: Well, I would like to begin by thanking our hosts for kindly inviting me, you and myself, to this meeting. I do not visit many meetings nowadays and this is a pleasure. Speaking to the title "GLOBAL WARMING AND THE DISALLOWED PROTESTANT CALENDAR," which is designed to some extent to provoke, but in the same time it is a helpful target - I have not prepared a paper for distribution at this gathering since I am in the process of preparing an article for what I would regard as mainstream publication, I hope not too far into the future, but I am very happy to discuss its content with you and will in fact write something down within the next few weeks. So my purpose in a way in coming here is to reveal lines of thinking that I have been following rather slowly for quite a long time. In order to deal with this, I am inclined to ramble, but I would like to put some order forth on the table right at the beginning, while you're still awake, and then perhaps branch out on one or two aspects of it later on.

I took "Global Warming" as the title, because it is in its kind political and it is very well known and I want to emphasize right from the start that I simply reject the modern heavy emphasis on global warming as a man-made phenomenon. Doubtless, there are men-made parts to this issue, but by far the most interesting and more important aspect of it is the natural component. So in a way politicians would be much better occupied in my view, and this goes for politicians around the world, preparing for the next ice age, rather than worrying about global warming, because we can say very definite things about the next ice age which seem to be simply not known nowadays, which can seem very, very surprising, and I can say this of climatologists that they are not even true to their own discipline of geophysics, and geophysists do know a lot about ice ages and yet the issue does not seem to enter the field at all, at least in the eyes of the public.

The issues are confused in the sense that I can go along with many of the political issues that they discuss, which have really more to do with pollution than they are about the course of global warming, or the ice age. And society of course is behaving in monstrous ways these days in relation to pollution generally, so the aims of people, in talking about global warming, are often the aims of those trying to stop pollution and are admirable. I hope that I have been reasonaly clear that global warming is a very, very important issue and I feel that what I am saying is part of it, and I think that the emphasis in the public domain is completely, completely off the table, it is simply wrong.

So okay I want to return to the issue of global warming, if you like, as a natural phenomenon and it's part of the current interglacial, and major interglacials, as really we know through geophysics, last about 10 kiloyears, 10,000 years, and it happens that we are near the end of the current interglacial - it has been going for something like 10 kilo years, 10,000 years. Prior to that, came what can be loosely referred to as the last ice age. And ice ages typically, during the last million years, have been happening regularly every hundred thousand years and last about 90,000 years. So we have been residing in an ice age, we, the human race, for 90,000 years until about ten tousand years ago, when we rather rapidly emerged from that state and came to exist in this current interglacial, and if one could work out to try understand the reasons for this, we would be looking forward to the arrival of the next ice age and competent people would say: within a millennium. Now that's long enough to relax for most people and I am not attempting to gain anything on that way of describing it, it may be around the corner, it... we may have a little time.

I attach a lot of importance to this knowledge of the regularity in ice ages. Geophysicists recognize it as a planetary phenomenon, a solar system phenomenon, it happens with astrophysical regularity. And so we look for an external cause for it. We cannot understand it in terms of purely terrestrial circumstances. So we have to look for astronomical mechanisms and the geophysicsist who do this know that. But astrophysicists in general don't help much. They are as baffled, if you like, as the geophysicists themselves. And I do like to try to orient people in a sensible direction in this field.

Now just a little aside for the moment on the current global warming. It is better to look back at the past, recent global cooling. And then you recognize that the current global warming results from the diminishment of the past global cooling. Okay, you all know that we come out of the latest Little Ice Age. That's discussed enough in literature... but it gets confused with peoples view of the industrial revolution. In the sense that that has produced pollution which we now tend to think has something to do with global warming. What has really got to do with global warming, is the disappearance of whatever was causing the past Little Ice Age, and the Little Ice Age, broadly speaking, lasted through the Middle Ages, and we have come out of the Middle Ages into a period of Enlightenment, where we don't know too much about this Little Ice Age in the past.

The right way to look at the past five thousand years, which is the period of civilization, many are saying, is really to recognize that it is covered by a series of extended cooling periods during the last five thousand years. And this is much to the point that one person was making, a person of great distinction was making, some three hundred years ago, I am referring to Isaac Newton. In that he and many of his contemporaries have gotten around to realizing that there was this pattern of three worrisome periods, during the course of longer periods, of two, two and a half thousand years, or to be more precise two thousand five hundred and twenty years. These are numbers which are mentioned frequently in the Middle Ages and not least by Newton, who made no attempt so far as I know to work them out, as it was, accurately, but he was quite happy to accept from his colleagues in Cambridge University that this was a real and common number to be addressed. And he looked for patterns of repetition in the historical record of 2520 years, and was entirely at one with the Book of Daniel which was the first attempt so far as I can see to tell people that there was a natural period of something

like 2500 years, and Newton in a way was very conveniently placed in time, in such a way that he thought, and so did many of his contemporaries, that this pattern had in fact completed, had repeated through three phases another period of 2500 years. That actual pattern had not quite completed with Isaac Newton, because he predicted its end in about 200 years hence. Okay, he was pronouncing these things from about 1700, maybe we could say 1750, he was still talking about fifty to the end of his life, he was looking ahead to times like 1900, 1950. 1860 is often picked out. What I am saying is that the end of the latest cooling period was foressen by Newton to be happening around, let us say, 1900, let us say somewhere around that number. He was noticeably vague about it, he had every reason to be vague, but a general pattern was there. It is that pattern that many of his contemporaries and successors reinterpreted as saying that Newton predicted the end of the world, let's say in 1860, or in 1900, or 1950, take it as you will, and to some extent that is drivel, a madness, which led certain Christians to think that they ought to organize things with certain Jews, and so on. Modern Israel owes a great deal through the British government and the American government for the position it is in in modern times connected to predictions of a great man, but these were nonsense interpretations. And it should be recognized, in my view again, not discussed sufficiently by people in the know.

So here we are talking about World End, or getting somewhere near it, but we just have to be rather careful because we are discussing in a way climatic things, and that is very much in vogue nowadays and again I would like to see this discussed a little more reasonably.

I connect this through Newton to another issue which I think is handled rather carelessly in the modern age, and that is the official calendar. We are talking about the calendar... I know there has a been a great discussion on calendars, many good books written on this, many people know a lot more about this than I ever will, I want them just simply to be addressing something of the history of the western calendar, that we all have some knowledge of. And I even want to be more specific than that, in the context, in which I think Newton was working within, I refer in fact to the Gregorian adjustments to the Julian calendar which occurred under the auspices of the Roman Catholic Church in 1582, I think that I got the date right, I didn't check it before I came out. We are talking about a calendar we are all familiar with, which is based on a 365 and a quarter day year with a planned set of leap years, or leap days inserted on chosen leap years, the important thing here is in getting it right, it involves having a plan for leap years and leap days. The plan was set up by Julian Caesar and was clearly parting from the intention by the time of Gregory XIII and that's why we had to insert, or, not insert, we had to remove certain leap years and it really is due to very minor

adjustments to the length of the year

But the underlying thing, the underlying physics thing - which is a rather dangerous way of putting it, because physics as such had not really been invented in 1582 - but was on the way of being invented, and people were beginning to think like they should if they were doing physics. This pattern, this claim about the year and the earth's spin is really reducing the issue to the fact that the earth, sorry, the concept that the sun was going around the earth, and there is a recognized precession, if you like, to the daily spin. I am purposely putting it into in more modern terms than those which would have been used by Pope Gregory, or any of the people

asked to set up the calendar at that time. But it wasn't done in the time of physics as we know it, but it was about peoples' - Newton, if you like, was in sight - he was about to provide some proper theories in which we could understand the setting up of the calendar in the times of Julius Cesar and in the times of Gregory in these terms. The real issue we are dealing with is the end issue of gravity. That is, issues to do with the rotations within the solar system which are under the control of gravity. No words of that kind at the time, but it was coming.

Now, you may or may not know that the Roman Catholic Church set this up in opposition to the Protestant Church in Europe. And to some extent, the Protestant Church in Northern Europe was rather systematically opposed to the change to the calendar which the pope introduced. To some extent the pope brought it in rather suddenly, in the hope that he could prevail upon disorganized Protestant states to align themselves with a Roman Catholic decision. And thereby claim, as it were, a greater extent for the Roman empire, the Catholic Roman empire. He was trying to outdo the Protestants to some extent, as it is known that the Protestants were also trying to outdo the Catholics, and they simply lost the race at that particular time.

Now what was worrying the Protestants? The Protestants were in touch with the public in Europe and there was no question that the vast community was never much interested in the way that the calendar was officially organized, or regularized. Their main interest was in... really had to do with saints days, and issues that deal with the god as they knew it. And again I would be putting words in the mouths of these people, to some extent, if I said that the Roman Catholics were dealing with a different God from the God the Protestants we are talking about, but this kind of thinking is simply anathema for most people nowadays.

I would like to suggest that it is really rather correct. The first person who clearly dealt with this in a context with which we could call scientific was Isaac Newton himself, though this is not well-known exept of those who made some kind sort of study of Isaac Newton during the last fifty years or so, and I will go on shortly to talk in rather more detail about what Isaac Newton was up to when he was creating science as we know it.

In fact, the Protestants were continuing to use the calendar of 365 days that distinguised them from the 365 and a quarter days, this is not much, but they thought of the calendar in purely 365 days terms, which were really precisely the same as the ancient Egyptian calendar, which again scholars nowadays discuss but I don't think they actually make much sense of it. But I do commend scholars in modern times who continually point out there is no evidence whatsoever that the 365 day calendar was the one that was continuously observed through Egyptian times. It is frequently claimed these days that this is so, and this is the issue that has already been discussed or mentioned here, the Sotic dating, so called. It's all nonsense. It presumes that people can read the calendar backwards in time through the 3,000 years of Egyptian history, and determine specific, very accurate dates using such a calendar. That is to misread what the 365 day calendar is about, it is no more than a, what was called a "vague calendar," a "wandering calendar," that is, people were happy to have a civil calendar that lasted 365 days, but they were quite prepared to adjust it to keep it in line with anything that anybody recommended. And so this was done locally apparently all over the place. And everybody getting by without too much difficulty. Nowadays we couldn't be doing this

because we have to run railways and airplanes on time and we have to keep the world on its toes. So that kind of calendar would not survive in the modern age, and in fact it was eliminated in the 18th century, not so long ago. And after Newton.

The vestige of this way of dealing with calendars exists in the presence of saints' days in the modern calendar. And to some extent, these saints days have a connection with past saints' days, but connections simply rather schematic, rather than recognized as anything very precise, nowadays. But living in France, as some of us do, we recognize that every day of the year there is some kind of saint's day, this is not recognized frequently in the country I originate from.

But nevertheless it was important not so long ago, and in the time when objections were being raised to the pope, and in the following roughly 200 years and working to a date of 1752, when Britain, Protestant Britain, decided to align itself with the Gregory XIII modifications of the Julian calendar. That is, the whole of Europe, not actually the whole of Europe but large parts of Europe, had more or less fallen in line with the new arrangements by the middle of the 18th century. See what this means, this is a public who is being told to do something officially. The public never does do what it is told officially that quickly. And this kind of past was still hanging on in 1750, well into the next century, into the 19th century. But it has by now so well and truly disappeared, that really none of us have really been told about it - I must say, I cannot, you do not, read a book about calendars that seems to make much sense of these issues. But they are there, and all the more interesting for actually being there.

So, okay, calendar leaps, using the calendars they were using, were done as they were done in ancient Egypt - on a more casual, ad hoc basis, depending on local magistrates and what have you. Now, one of the important features of the Egyptian calendar, this calendar that was being used - and it was not called Egyptian calendar in Europe until two, three centuries ago - was that it was subdivided in a different way from the calendars we now use. We are now used to having equinoxes and solstices, and divide the calendar into four parts, four seasons, which we connect with the weather. That's not so with the calendar I am talking about, the Protestant calendar, as noted, it divides in three parts, you are familiar with this from ancient Egypt, the beginning of it was middle of - in modern times, if you like, so meaning three centuries back - it was midMarch, the beginning of the year, and these other two times in the year which were important, were mid-July and mid-November. And we are talking about some pattern of what we now recognize as saints days, they are without doubt connected with patterns in the arrival and perception of meteor streams.

A meteor stream, we are all comfortable with, derives from comets, and there is no doubt a very good chance of a meteor stream being connected with known comets in the remote past, and I mean, within Egyptian times. A lot of us are comfortable with the idea that gods are comets of sorts.

But the world has maintenained this kind of thinking in public domain up to let us say 1800, without a doubt, and yet somehow it's got pushed aside and is no longer official, and we write history in such a way as not to be aware of this. Many people have objected to this way of

looking at history, and I count Velikovsky as a very important person who, as it were, recognized an aspect of it. And one of the important writers, whom I would certainly very much like to know much more about, and don't, who Veklikovsky referred to, was Radlof. He was a critical German writer at the time when these things were being sorted out, who I think must have known more than I know of in the reference that Velikosvky gave, and I would like to pursue this matter with any of you, all of you, at some other time. I ought not digress on it. I am poiting a finger at the epoch which in my view is absolutely critical to sorting out what actually i am getting at.

Let me try and connect with god. I have come to God as defined by Newton, so in a way what Newton said can't be applied to an earlier date, though I have no doubt Newton was speaking up the general vibes of discussion among Catholics and Protestants, through the Reformation and Counter-Reformation period.

What the Protestants would do through, let us say, the whole of the 17th century, was to make very serious efforts to uphold and maintain their view of God against the one that was held by the Roman Catholic church. And this meant an attachment to their views of what the calendar should be. And they upheld the Egyptian calendar. They would not have called it that necessarily, though some people would have, in view about Egyptian history. But they would maintain, through simple public usage, what I would call the Egyptian calendar. And if that went out of mode, it meant recognizing mid-summer and November as critical times for meteoritic activity, meteor activity dictated by their God, and if you did things in real life which corresponded with those times being active, it was important that you were doing things in the godly regime. That may come as a surprise to some of you, but I would maintain absolutely that it is the case, and in Britain, the history is familiar with an attempt to overrun Britain by the Spanish Armada who set out from those parts in late June-early July, with a general plan to land in Southern Ireland, and subsequently invade Britain in November. You all know that the second part of their plan didn't take place, they ran into bad weather and the whole thing got scuttled. It was a great achievement for Britain that their navy joined in the battle with the weather. And saved Britain. God had different ideas about the outcome of the Spanish plans.

The remarkable thing is, that this scheme of things was repeated in 1688 when the Dutch navy set out from The Hague in July, not to as it were take four months before they landed on England, but simply to announce that they were prepared and ready to come and land in England in four months time. And this preparation alerted Europe to a game plan which was being achieved in the name of God, and they duly set out really at the last minute, because of changes of the wind and all the rest of it, which kept them at first from going ahead with it, but they did go ahead with it in early november of 1688, and landed in England to impress the British people with the fact that they were acting in God's name, and carried through a revolution with great success. Which suited their allies in England absolutely to perfection. A new group of people took over the management of the country, it is thought of course to be William III., but in fact he had backers in England which boiled down roughly to the City of London nowadays.

It was a great success, it is often related now to the arrival of the Enlightenment, and it is like

this, but in that time, it was done in the name of God and it had nothing to do with the arrival of secularism, it was a demonstration of the power of the Protestant God. Some of us do now know this, there are some very interesting books now written on what a fake this invasion of England was in 1688, a total fake, we British people who often were told we have never been invaded, we were invaded - sorry - never been invaded since 1066, I am saying - but it is untrue, we were invaded in 1688 and we were conquered. It was a conquering assisted by one of the parties, if you like, one political party in power at the time, they simply out-maneuvred the other political parties and the Dutch were involved, but very soon afterwards, as we were to see, operators were concerned, it was part of the battle to dominate India, it was the East-India Company and factions in Holland and Britain were fighting it out, and the London faction duly in course won, soon after this fake invasion. I can give you books and reference to all this, it may interest some of you.

I don't want to make a major history of Britain after this, but I do want to pick out some items from the course of events that followed. What I want to emphasize is that the Glorious Revolution of 1688 - that was the year after the publication of Newton's *Principia,* so it was at a time of revolution, which undoubtedly affected whatever Newton's plans were in relation to his publication. I want to come to that in a minute. But this is also done in the reign of protestantism, and I told you already that this began to change in some way by the middle of the 18th century. We'll be killing off the calendar in 1752. Why are we doing this? It's because the evidence for, let's say, the Protestant view of God was really weakening, but had obviously been very strong through the revolution time in England in the 17th century, even late 16th century, that is, through to Charles the III., that sort of time, and I don't think there should be any doubt at all that what we were observing were things in the sky. And it was called by the Protestants "providence," they were describing the phenomena they were seeing in a sort of general language referring to "providence." And there are records of learned clerics and things all trying to "keep records" of "providences" and saying actually quite sensible things about the necessity of doing this, and it's linked with the origins of the Royal Society itself, that is, they saw the need for understanding what meteors were seen, what they meant, and beginning to treat them in, let us say, a scientific manner, rather than one of glorification . So that was all going on, and scholars nowadays can look back and assess it and begin to recognize this process of attention to the meteoric sky was going on in a kind of private way, not in the public way as we do nowadays with our science, there were no journals that had really got going, so it's all in private diaries and all the rest of it. And that was going on all the way up to, let us say, to the end of George III's reign. So that's well into the 19th century.

ALFRED: would you say that the idea of providence was a kind of a non-human god...?

VICTOR: No, I think what one should really make of "providence" is the belief that what you see happening in the sky is for your good, the emphasis should be on that, rather than the perception that what you see happening in the sky is to harm you. ALFRED: Providence has almost the character of the Holy Ghost - the, you know, the New Englanders - I never even thought too much about it - but I noticed they are always talking about "providence..." Then, the word "God" sort of died out in American usage...

VICTOR: Well, that I would take, yes, "providence" is a kind of secularizing of God, one did not want to talk about God in public too much, one did not want to examine it, it was an unholy thing to be doing. But you were comfortable talking about "providence." So probably that was led by clerics and politicians as much as anybody else. Yeah, it's an interesting thing to pursue. Well, I think it's certainly worth emphasizing and recognizing that the language was changing all the way through the period of the time we are trying to talk about. I want to emphasize now that within a decade or two of 1752, which was not a clear cut time so far as the actual abandonment of that particular calendar was concerned - it was an official moment when it was officially gone, but people were still talking in the past terms for well, well another century - and that ended in the middle or so of the 19th century. Thus forget that for the moment, we'll go back to 1752, a couple of decades on, the very famous comet was discovered which commanded attention for about fifty years in the context of the demonstration of the absolute reality of Newton's laws. This is the time of the great French mathematicians, culminating with Laplace who proved for us that what Newton had said was right. I do feel it ought to be emphasized that people did not immediately understand Newton when he published. What we read are the conclusions of a very few people who were able to read it and comprehend and make intelligent remarks, that it was not communicated, except again to very few people, so that the build-up of understanding of Newton's great work was long and really it was about one hundred years before Laplace was at work tightening up all the details and demonstrating to the world, to Europe if you like, at the time, that what Newton had said, enunciated, was correct.

And it meant that there was a very confident view of physics established by the end of the 18th century, and it was one where Laplace allowed himself to have even a perception of the origin of the solar system. Which again creeps into the text books nowadays, and people talk about this rather good perception, well, that's alright, one ought to be perhaps a little more modest about Laplace's great perceptions of things there, he was the first to really point out, that having addressed the behavior of comets now for a hundred years in the context of Newton's theory, and with the added information obtained by folks like Halley dealing with comets in the past, the whole of this boiled down to the fact that you could begin to see the solar system as a more or less regular and equilibrium state, barring the unknown properties of comets, and Laplace expressed his conclusions about Newton's theory, more or less in these terms

• he really pointed out the fact that comets were really rather important and interesting to conduct new research on, so that we could learn more about the general stability, long lasting nature, etc. etc., of the solar system. And I think that prepared the way for research that has followed. And really kept us alert to the real status of these comets this is all said in the time when the first asteroids were being discovered and all the rest of it.

ALFRED: Why was Whiston so defamed by Newton?

VICTOR: A good question, and I'll try to - may I delay an answer to that? It is important, that, but I think it is just an aside...

ALFRED: Don't... don't...

VICTOR: I will come to it - what is, I believe, very difficult to understand, is the response of the public or even the academics, generally theologians, astronomers, the lot, to the discovery of Encke's comet, which is a comet that appeared about two decades after the calendar adjustment I just referred to. Everybody would have seen that the critical times for this comet's orbit, which were its perihelion and passages across the earth's orbit, corresponding to the critical times of the Egyptian calendar, the perihelion is in March, and the two crossings are July - I am roughly speaking - we are talking about times end of June, early July, mid-July, and we are talking about November, and these three epochs were perceived, if you like, at the time with a godly aspect, but now were perceived with an observable aspect in the form of a comet whose orbit perplexed astronomers for thirty or forty years while they tried to understand it, at the time when Laplace was putting the finishing touches to Newton's theory. So that we could handle it on, as it were, every level.

By 1819, Encke had worked out the orbit of comet Encke, which got his name and is the only other comet, with comet Halley, to be given the name after the person who determined its orbit rather than the person who discovered it. So it's distinguished in a sense in astronomical eyes in these sort of terms. It was as important as knowing about comet Halley at the time, and it has an orbit which as you all know does rather funny things within the solar system, it very obviously has precessions which cause it to move in latitude conspicuously, as it does in longitude, and these were features, especially the latitude motions, which are not so obvious amongst the planets, I mean it exists, but they are hard to detect, they are more obvious for something which is oscillating out of the plane with a period of something like two and a half thousand years - now, I am not saying that comet Encke was precise in any sense of that time, but it was implicit in the orbit of Encke calculated, and certainly comes up if we calculate these orbits nowadays. We know the periods and numbers like 2500 which I mentioned are well within the compass, they are very short periods as to what other people talk about with precessions in other contexts.

Okay, I might berate people then not recognizing this discovery around about 1800 for what it is, and I would now like to draw attention to two books that I brought and simply ask how many of you have read this book, it is called *Black Athena* by a chap called Martin Bernal and I would just like to ask, really, have any of you read it?

VOICES: just heard of it - heard of it, yeah, not read it - I have it in my library waiting...!

VICTOR: It is - I am not here to speak in praise of Martin Bernal, I have never met him - but I think it is praiseworthy, it's a book really for archaeologists and historians rather than astronomers, he knows no astronomy, I would submit, it's a very rational book, he, Martin Bernal started off life as a Chinese scholar, I believe, I don't know absolutely, but I think he is the son of another famous Bernal who was a great scholar at London University, a well-known physicist who worked in the field of crystallography in the school that gave rise to all these people who created things in genetics - founded modern genetics. He is a learned chap, he gave up studying Chinese history after about 25 years and decided to take on European history, let us say, Greek history rather than European history, and this was the product of his enquiry. And he wondered - no, he did more than wonder - he condemned the

systematic suppression of Egyptian history which began to take place around about 1820. If you read this book, you will discover that he systematically homed in on that time, and that is the time when the modern view of classical history really began, and it began in, let us say, through the combined efforts of British and German scholars, classical scholars, they brought forward their version of classical history as opposed to the previous version of classical history which was based firmly on the knowledge of Egyptian and Mesopotamian history - now, we all know these subjects themselves have evolved and improved with the passage of time, but this is something that's happening before modern archaeological research. And all he is saying in this book, is that there was an attitude of mind being cultivated in the highest circles, which condemned Egypt as a background for understanding anything. I exaggerate to a degree, but it is worth doing that here simply just to make the point. The idea of a sensible calendar existing in the past, which the Egyptians were following and which we have records of, could be disposed of by this way of treating Egyptian history. Martin Bernal has been thoroughly condemned by classical scholarship. [The book] has been written in the 1990s, and I have seen reviews that were written then and they are shocking, just as bad as the sort of things written about Velikovsky, less famous, but managed to make more noise among classical scholars, they managed to keep a lid on this and he is a one-man band so far as I know, noone has come forward to give him the support that he is due, but any scholar who reads it who knows nothing about the subjects would see that it is a genuine piece of research - I simply want to suggest that it is well worth looking at this book for those of you who are sort of interested in this kind of subject. I am interested in this book because it lacks astronomy, and I want to know quite why and on what basis this view should have been so established amongst classical scholarship, and I brought another book in to show, which I am pretty sure none of you ever read, it is the *History of the Royal Astronomical Society* of which I am a member, have been a member for many, many years, and this book was published in 1987 not so long back - this is a reprint, it's a reprint of the first volume, the second volume is all about British astronomy from 18 - sorry, 1920 onwards, this volume is about 1820 through to 1920, and it was written by a selection of British astronomers since the beginnings of the 20th century, looking back in time.

And it is especially fascinating for what those people knew of the time from 1820 on, when the Royal Astronomical Society was created. You will not know there was a great row at that time, between - at a very high level in Britain, whether the Royal Astronomical Society should even be created. And the opposition was run by the Royal Society.

The Royal Society in a sense was the protector of Newton, because Newton was a great figure in the early days of the Royal Society and they had views as to how astronomy as a subject should be protected in the early 19th century and these views did not amount to transferring the management of astronomy from the Royal Society to a new body called the Royal Astronomical Society, this was expressed through the mode of whether the charter, the royal charter for the Royal Astronomical Society should even be issued. Well, it's rather important for the Royal Society to have the Royal Charter, and this was very much their intention, but they had to play ball with whatever the government dictated at that time.

ALFRED: Has a book been written in political science you might about that controversy?

VICTOR: No, not that I know of! It's very interesting...!

ALFRED: Now...there's a doctoral dissertation...!

VICTOR: I can tell you that comet Encke, Professor Encke, the great Encke was well recognized by the first leaders of the Royal Astronomical Society, he was awarded one of the first gold prizes that the society issues every year, I dont know exactly when, it was in the mid-1820s. And there was a very strong presence at the head of the Astronomical Society that then was of Egyptian scholars who were fascinated by astronomical issues as discussed by the ancient Egyptians, not to the same extent by Mesopotamians, the reception was not so well, hadn't advanced so far - that leadership of this society was gotten rid of in 1830, alongside their acquisition of the Royal Charter, and furthermore with a new attitude taken to comet Encke! Comet Encke was put alongside the first discovered asteroids - minor planets at that stage and one important element for the astronomical world in the North Globe map which the Society was going to be in charge of and it was an arguing point, the Royal Society hadn't been doing a great job in looking after the Nordic Globe map, and it mattered for the sailors in the British Navy. This was about the change under the Royal Astronomical Society, but they were not allowed to publish any more about comet Encke! It was removed from the publications list - now: minor event, or great event? Because it is not being remarked upon by anybody that I know, one would say it was not a very importan event, but I think that it's absolutely vital...!

ALFRED: Sorry, but it runs parallel to the quarrels over Darwin - you had your semi-darwinists who...

VICTOR: Let me add that any single issue here, the politicians were getting their word in first, and it would be very interesting, I believe, to thoroughly tracing the whole of this, it will be in the archives of the societies involved, in Parliament, or the Bureau of Longitudes, or all the way... These official bodies were parties to all that was going on, but if this chap (pointing at Bernal's book) wants to know who the key figures were, in, as it were, having an official attitude to Egyptian astronomy, and I have given it to you, it is the Royal Astronomical Society - to which I belong! Tell me I am going along in time - I am allocated - do you mind if I - carry on...?

AMI: Sure!

VICTOR: I am giving you what I think is the less...

EMILIO: aah...

AMI/ALFRED: Emilio...?!

VICTOR: You mind...?

EMILIO: Well, I just have to take a train at three forty...

AMI: It’s fine, you will talk before lunch that’s for sure...

EMILIO: Hm?

AMI: You’ll talk before lunch... sure...

VICTOR: Another half-hour in fact, if I may...

EMILIO: Maybe just what you said about Black Athena - this attitude about history of Egypt - it parallels the same attitude towards the history of India, that was deemed not to be - all the Indian texts alike, the Vedas, the Maharbarata, Ramayana... were put to later times by three or four thousand years, but now one has placed them back to the fourth millennium BC by using astronomical knowledge, statistical analysis, which is the main work of prof Subashkak, who is one of the greatest of indisists in the United States and is a member of the royal family of Kashmir, and has written 300 papers and 15 books on ancient India. So it’s just the same - the view that outside of Europe, there was nothing! This was the general attitude that was politically motivated by imperialism, colonalism and so on...

VICTOR: I accept that correction of the viewpoint I am presenting...

EMILIO: It is not a correstion...!

VICTOR: Well, it is important because what I am trying to nail is the source of this problem, and I think that the problem is, as it were, being continually regenerated now, and it’s excellent that scholars like this chap (pointing at Bernal book) and others whom you are referring to, are now breaking out of it. And getting a more correct version even of European history. Because we clearly misread that as well. I think that it’s a readjustment of what Newton did. I think that Newton was far greater than we know him, he was doing far more than we credit him with, and that far more was a more correct way of looking at the past that is the ancient regime that we have now, and the Enlightenment was basically a total distortion of what Newton was saying. But Newton himself contributed to the fact that there was a distorsion, and I think he did this out of fear of the consequences of talking about his findings in public. And he just did not know whether he would get the same treatment as Galileo and Bruno, it sounds an extreme thing to say, but this is within fifty years or so of those people and he was very conscious of what they were talking about, it was all in the wind, as it were, and in private discussions battled within the sort of Protestant-Catholic frame.

EMILIO: It is also about the historical question, not only about the investigation concluded about the (...) falsified the record...

VICTOR: Yes, yes, correct, correct... so that Newton “scholarship,” to put it that way, was an unknown subject until the immediate postwar, since the Second World War. Newton scholarship was warming up before, and the essential work was done by Maynard Keynes, the famous economist, who succeeded in diverting sale of Newton’s unpublished writings and

papers, which had been kept locked away for a couple of centuries after his death. They went up for auction in 1933, I think, and he managed Keynes - to get money to guarantee the retrieval of about a quarter of this material at the auction, and planted it in King's College, and I think hat saved them for examination by scholars at King's College and all the other people who go there, Keynes has had the first stab at this material, which he had saved...

ALFRED: Is this right - what happened to the...?

VICTOR: Well, what happened at the auction I am not an expert at - it was scattered around the world...

ALFRED: It was...?

VICTOR: And this was Keynes' theory, that it would be irretrievable once it had been so scattered, whether it happened, it may or it may not be, I don't know...

EMILIO: Well, I think I know that half of them are in Jerusalem and half are in Australia, I don't know, maybe Kiri Te-Kanawa will lend us her voice once she stops singing and...

VICTOR: Well, whether it matters or not, I am not sure, but the important thing is what Keynes said about trying to understand Newton better and within ten years, he realized that he had developed his theories purely in the ancien regime context, and had nothing to do with the Enlightenment that followed. So in a sense it was what euphemisms consisted with the circumstances of the ancien regime which I am counting as the period about 3,000 BC through to Newton's time. A long period... and very loosely described. And the Enlightenment in a sense has now become the kind of change from that way of thinking. And there is the fact that made Keynes in his... what happened was that there was a small conference in 1946 at the Royal Society to catch up on the conference that should have taken place in 1942, but with war on, we couldn't celebrate Newton's birth in 1942, so in 1946 a small gathering of reputable scientists from all around the world came to say their piece on Newton. Keynes at the conference had by then just died, he was caught up in business between the British government and the American government trying to cover loans to Britain to carry out the war, and that was hidden you know his major business, so what he was doing about Newton was a kind of sideline, but he left an essay which he prepared for the conference, it's only about fifteen pages long and it's called "Newton, the Man" and it just tells the world that Newton is not quite how you think of him, and he explained really that he was a Babylonian astronomer, his thinking goes right the way back to very ancient times and really we ought to think back about how Newton was thinking.

In the proceedings of this meeting there were a number of essays, about ten in all, and several are well worth paying a lot of attention to, historians tend to pay attention to ones that they understand, which leave out all mathematical and physical things, and it is important that physicists and mathematicians look at the other essays. I dont think that many have, and very, very little has developed out of it. But they do make it clear that, one: that Newton almost certainly was the founder of atomic physics and I want to try to make it clear to you why one can say that. You can put together a great deal from Newton's private unpublished works

which supports this viewpoint, but there is a controversy amongst scholars as to who or what Newton was, and I want to explain precisely why that controversy exists.

It exists because there is a growing view that Newton was doing - prepared his way for the *Principia* in a fashion quite different from that which all scientists have been presupposing until roughly the present time, and Newton ought to be looked upon as a brilliant youth who was radicalized and is really the main source of what is now called the "radical enlightenment," that is what Newton was really all about in his earliest writings, and he was really publicly de-radicalized, if there is such a word, and he always prepared for that situation by writing *Principia* in a perfectly, in a specific way which avoided him getting caught up in any such debate, and he told you this by telling the world that "I make no hypotheses," you are all familiar with that, something that he insisted on and it insured his book got a very good reputation amongst all the experts who could seek to understand it. And what did he mean by hypotheses? He meant, may I submit and seek to prove it, he meant: "what was the nature of God?" What he really meant was: what was the physical nature of God? Everybody thought God was something real and physical at that time and Newton was in it. And this is rather difficult for people in the modern world to understand. Because I submit that intellectuals in particular don't think about a real physical god at all, they have all turned the real physical god into a transcendental spiritual, other-dimensional god, who is not part of the real material world, in which Newton insisted we were in. And which God was in. Now if you just can get hold of that way of thinking and recognize that Newton was simply expressing in mathematical and written terms the nature of the philosophy of Spinoza, who was a contemporary, you will begin to understand why all this is so difficult. Newton did think that God was physical and real, and one of the objects of science was to get a better understanding of how this "machine," if you like, was functioning. I'll just try to give you a feel for it. Newton came upon all this as a young boy at a school in Grantham, which was not just down the road from him, it was at a sufficient mileage he had to board somewhere in order to go to Grantham grammar school. He boarded with an apothecary, who was a revolutionary really, and all apothecaries in those days were revolutionaries, because they were alchemists, he was brought up in his teen-age years studying alchemy. Very interesting to know that. And it is well established. People criticize Newton as an alchemist, but that was the only way people could think chemistry in those days. In a sense he was being radicalized through this, as it was a side education from his main education at the grammar school. But he then went to Cambridge through family influence, and very soon came under the influence of another radical mentor, one Isaac Barrow, who became master of the college later, and also later, very important, chaplain to the king. Newton was recognized by Barrow as a genius and he was also a private line to James II., ah, Charles II., and James II., in that order, through the chaplain, if you like, and in a sense, through Newton, they were learning the nature of catholicism and protestantism as discussed by a clever chap, and it kind of, I would suggest, frightened the management..

This is not... This in a sense is known, all these facts, but one doesn't put two and two together and recognize what's going on. Newton was a lot of dynamite who was before he was writing *Principia,* he was sorting out the history of the world and he was doing it through the standard sources of ecclesistical history and, well, more ordinary history. And to boot he was a very legalistic, thorough mind, and rather good in mathematics. And all this put together meant that before he wrote *Principia,* he had got the world sorted out and he was

publishing something that must not reveal his private thoughts on the nature of God for fear of the argument that would lead to his head being chopped of, I am afraid, to put it that way, it's a very interesting state of affairs which led him to mask things over in *Principia.* And unquestionably, he succeeded.

He hid his real thoughts, and his plan is quite clear, although nobody has told you this, he had one paper which he was preparing immediately after *Principia*, which he had more or less fashioned out for presentation to the publisher by 1690, and it's interesting the way he did this, he did it through the help of a well-known philosopher, John Locke, who had connections with the Dutch, that's where he had been out of the country, as it were, for political reasons, and had learned a great deal about how the Dutch were operating, and he got his contacts with publishers there, the intention being to publish his paper in French or German, or something, or Dutch, it doesn't matter, he didn't want it published first of all in England, for the political ruptions which would be caused.

The title of this paper is "The Philosophical Foundations of Gentile Theology," and he stopped its publication when he realized that Locke had been talking too much to other people, and he was dead worried about his career, the paper never saw the light of day in his lifetime and publishers eventually put it out about thirty years after Newton had died, but with the wrong title, so nobody quite knew what was being talked about, and it did not properly come out under the title until about 1780-1785, and could be said but is not said - could be said to have precipitated radical revolutions from that time on, there was a proper understanding of what very few were thinking...

SOMEONE: Ha...

VICTOR: Pardon me...

ALFRED: The British radical revolution?

VICTOR: No, what I try to say, is that the ideas...

ALFRED: You don't mean the British radicals...?

VICTOR: No, I am not saying that, what I am saying is that scholars on the continent got to understand, and scholars in Britain, as well - it wasn't just Britain, it was a wider community who had the opportunity to understand the way in which Newton was thinking. I don't want to spend a lot of time on that, I have to ration myself, but it's very interesting, I just want to tell you that Newton's view of history is one that is very pertinent today, in that he truly thought that Europe in, let's say, 3000 BC, was a much bigger place, in the sense that it was filled up with - not filled up, it was occupied - by a people whom he called Gentiles, and his Gentiles, let's say, existed in Europe as we know it, in the Middle-East and in North Africa, and it roughly corresponded, let us say, to the subsequent Roman empire. But a Roman empire incomplete, without Northern Europe. I hope I have made myself clear: he just saw it as a grander show, into which these people, which we now call Indo-Europeans, had not

arrived. But they were all on the border and about to arrive. And at that point in time, there was a broad view of a God which was philosophically sound, and it was the view expressed in the Hebrew books. And related to the existence of what he would have called, or what the Hebrews called rather, Lord God. Who was superior to the gods as we saw them in the sky - that was the view held by the gentiles, or the pagans, as you like it, it doesnt matter, but it embraced the whole of Europe, Europe without nations, if you like, at that time there being tribes all over the place, and at that time in came Indo-Europeans, possibly in came Semitics, as well, and they gradually carved pagan Europe up into the nation states, but all of them maintaining a rather different view of God - it was one of the things you could see in the sky. And these people were blamed for idolizing things that they could see, unlike the Hebrews, or the pagans generally, who didn't idolize, they prayed to a god they couldn't see.

The god they couldnt see was the one that Newton emphasized beyond doubt as the most important thing in the world, because he provided the explanation of gravity and that's why that subject has become important or did become important at that point in time. He as it were had a rather great admiration for Galileo's expression of the laws of mechanics, and they came out in the form of Newtons three laws, which we are all familiar with. Once you get through the new of them, you can then think about gravity in a logical and understood way, and he simply said, as you all know, what happens when you step off a cliff? He talked about apple or trees in terms which we discovered perhaps come home to us all a little better if we talk about "stepping off a cliff," because we undergo the process of acceleration due to some cause, we simply have to ask the question what causes it? He had kept away from that, as you know, in *Principia,* but privately he had to think about it, or felt he had to think about it, and he did. And he would have taken the view that actually the distance, like many of his critics, was objectionable. God as something that makes contact. So what makes contact with you when you jump off a cliff? No, when you step off a cliff - it's better to say "step off a cliff" rather than when you jump, I am trying to say there is nothing there to begin with, but you immediately feel it, it takes you down, it accelerates you, a force is acting, it has to be a differential force by an unseen medium arriving, that was the immediate arrival of what was later called the "material ether." And became a great subject of discussion amongst physicists, as you all know. And went to town in the 19th century.

Newton had a name for this medium also, he called it the sensorium, and he borrowed the term to some extent, no, he invented the term, but he borrowed it from the Greek "mind" which you find amongst the pre-socratics. So he was picking up an idea that was abroad when Pythagoras, the Pythagoreans, were going to town and telling you how the world worked.

Newton took liberties, I expect, and suggested that the pagans knew about all of this three thousand years, or two and half thousand years before that. He obviously thought about the problem, and it had to be the sensorium, and within the context of Newton's laws, and everything, we are all and all material objects, and are in some kind of state of equilibrium with this sensorium, the material ether, and it applies to us as bodies as a whole, but it also applies to us as atoms, and it was a very important part of Newton's thinking to recognize - that he recognized that the ether penetrated atoms as well as it penetrated the whole universe as he could see it. So he was building up laws to describe the solar system, which were available to us by mere sight, but we could not see the atoms, but he was prepared to infer

that they were interacting with the same kind of mechanisms, if you like, as we were with gravity. Now gravity is a differential force within the material ether, so the material ether has structure related to where gravitational fields are acting, likewise something we don't call gravity now, but forces of a like nature, which we discuss carefully so as not to confuse them: electricity, magnetism, strong nuclear forces and so on, and these are all different categories of possibly one force we would like to find in our theories, we are all in Newton's mind, he knew something about electricity, but not a lot, and he discussed it more or less in terms to do with light, okay, and we rather talk about light, photons... these sorts of things are discussed in his works. He had a thing called the sensorium which he recognized as Lord God in the Hebrew literature. This was the true god which we could not see. And which other people were ready to deride, because you were inventing things which you couldn't see. And that's the popular criticism in the academic world. That you don't construct scholastic theories about things that don't exist. And this is one of the problems almost about scholasticism and intellectualism generally, that we are prepared to throw stones at people who discuss things that you can't see rather than the theories, and Newton was in this business which proved enormously successful before the twentieth century in understanding physics. And there are not many physicists who would deny somebody like Newton his achievements with this kind of support behind it. There is an invisible medium he would maintain, and all people who have followed that would maintain as well. You can get rather ambitious in thinking about such a material ether, and people did during the 19th century, and that contributed to his ultimate decline in the 20th century. It was easy to condemn, but you should know that material etherists thought about structure of things in the material medium around you, and this is why they had an interest in bumps on your head for example, and the thought that there may be waves being communicated between people, it was a connecting thing, it allowed you to be in direct contact with God, okay, it was good for a kind of socialism, it was not the solar system where you had your contact through experts who were the people of the Church who interpreted what God was doing for you. This was the idea that you had personal contact with a god, but this did not mean you had a personal god, which is the way it is termed, or frequently termed nowadays.
Okay, Newton was thinking this way, he thought of the material medium in fact in biological terms, there were papers written where he would talk about the vegetation of metals, I dont know whether you know this whole thing, but he thought of the evolution of matter from the high temperature to low temperatures regimes, the melting and the freezing metals, in the terms of vegetation. Vegetation was almost his word for evolution. Okay, it's all strange stuff you may say, but I am just trying to give you a feel for the way in which Newton's thinking came into the world. And much of it was being disposed of subsequently. Five minutes?

ALFRED: haha! Four and half!

VICTOR: I am narrowing, but my aim here is to say that there is a framework which existed in Newton's time and was very clear to lots of very clever people by 1800, and they were pursuing physics in a way which matched Newton's way of thinking. But which got chopped off very firmly in the the beginning of the 20th century. When Einstein said there was no ether. And he did that as a young man, soon after the special relativity was invented, and he certainly regretted it, but it was said in haste and he found it quite difficult, I think, to write down the fact that he had made an error, and he admitted that there could be a material ether. He had no right to say that he had proved otherwise. But it was caught onto by many

scientists who were glad not to have to deal with material ether in a theoretical way. Because as you know a lot of very good stuff was done like Maxwell's equations, and that sort of jazz, and it was all in the bag at the time, and the subject was going ahead very, very well in the hands of a famous scientist called Rens (?) who died around 1930, but somehow the subject died with him. I don't think we have the ether nowadays, I am never very sure, but you all know high energy experiments performed by physicists, some of whom say we are looking for the god-particle, I think they all know about the kind of thing that I am talking about, in relation to Newton, once we understand how particles are behaving at very high energies, the subject of the material ether will come back in to play again at the level of ordinary physics. But it really is already in play in astronomy, I think it is making astrophysics really quite difficult, we have a lot of dark matter around with a failure to understand how gravitational fields are working on a very grand scale, all of that is another field that's cosmology, and I am not talking about it. I simply want to end with Encke.

Comet Encke, historically important, but practically important still, and it is roughly in the right place now, but mistakes I think are being made. There are not enough astronomers oriented towards it and that's a bit of a complaint, it really should be more studied, because it came to light again suddenly when infra-red astronomy started in earnest in 1984. And that was when the subject was being conducted by, let's say, groups of scientists whom I think were being misdirected, they are all good scientists but as a community, they behave more like a religious group, I would say, rather than a group of scientists - they were dominated by cosmologists. And that meant they were looking past the solar system, through the solar system, in order to look at the galaxies, which they were most concerned to understand. They all were never seen in the infrared and that's interesting. But the solar system was a nuisance and it is seen in the infra-red. And the main approach to the solar system was to eliminate, simply, so that whenever a cloud appeared it was a negative in their equations, and subtracted from the real world and this meant that there was only a small group of, let us say, planetary or solar system scientists dealing with the first findings of i-reds and never dealt with over a period of ten years, remember that these groups organized by NASA tend to be organized with a viewpoint to a rather limited number of people. Dominant. And it did mean at the time that cosmologists were too dominant. And a rather select group of planetary scientists were involved. And I think it was a trick, because the planetary scientists were really low weight, and all good people, but low weight, and I think they went off on a wrong track with the very remarkable discovery which showed something with comet Encke, a thing we now call the Encke Trail, it's a huge feature, very justifiably called a cosmic serpent, it's the only serpent-like thing in the sky, and you could reasonably call it a serpent and there it is, in the infra- red sky near to us, and running around and around the sun year after year after year, and so on. And I believe that thing was bright and shining three thousand years ago and everybody knew about it. But we have had to wait all this time to catch a glimpse of it. Also, alongside this serpent, is an array of things which you can see - they are bands associated with the well-known Zodiacal Cloud, and these bands are exatly the same in character as the cosmic serpent. So much so that we would naturally think the bands were created by an earlier form of the cosmic serpent, truly you would think that, if you were trained by astronomers. That's what you would automatically think. But astronomers are taking their eye off the ball and they claim that these bands are made in another way, that is by distant asteroids, it is extraordinary, I think that this is a group thinking of the worst possible kind, and claims are being made mostly in a few universities in the United States and I am not opposed to the United States, I

am simply saying it is group thinking, in the United States, amongst dominant groups, which has pushed aside a rather more freely thinking attitude to comets which exists in Europe, I claim that absolutely and because it is well known that when the Giotto enterprise was in place, the NASA rejected it - wanted no part of it. And a famous astronomer, Whipple, in fact, had to come to Europe for support. It happened to Whipple, who is really quite interested in the Taurid meteor stream, which he made his field of study, and that's comet Encke. He is a great man, who has studied comet Encke in modern times, but he was rejected by his own nation, I would submit, and it's a monster. We are all the worse off because of that error and okay, I think it is being put in order to a degree, but the necessary research does not in my view continue. And I would end by saying that when I was writing *The Cosmic Winter* with Bill Napier, we were already on the way to where it would go, there are two or three papers which I published in the 1990s, in fact the last was in 1999, when I proposed, you know,the pattern in which all this has happened, and it's really a projecting back, this is a dangerous dynamical game that physicists play, but we seek to understand the past by pushing our orbits back in the solar system. And it has to be done with very great care, as Bill tells me frequently to relax a couple of days, and he is right, but we attempt to surmount our own difficulties, and to make sensible statements about five or six thousand years ago.

I firmly believe that the serpent I have described to you is in a resonant orbit very close to the period of comet Encke, and it is easier to handle resonant orbits in the past, because you got continuous interaction between the planets that matter and the object you are talking about, which is more stable, as it were by definition, than any other kind of orbit. Once you deal with this, you can recognize that this object could well have been formed by the break-up of a previously existing comet, when it made a close encounter with a planet and as far as David Usher and I who did the work on this in 1990 or so, I am concerned the only planet who is available to do this is Mercury. So I would claim that there was a giant comet in existence which was seen in the sky, no problem, near five thousand years ago, and this comet was actually seen, by a few, not necessarily all, making a close encounter with what we, with what was - well, Hermes, rather than Mercury. And probably the brightest crowd of people who retained the right information to, as it were, understand all this in the future, were the crowds of people who later turned themselves to Hermes Trimegistus, I hinted at this before, that is a hint to the fact that this object which we see in the sky grew out of a collision with Hermes between something that had been master of the sky three times, and it is going to come again. And do it three times again. And Newton was the one who recognized through his upbringing as a radical young chap that this was Hermes Trimesgistos in action, and even in his own time, and predicted the end of his time, that is to say about 2000, or whatever, 1900. If you cultivate this viewpoint, then I think you are getting somewhere near the truth of things. Let's leave it at that, thank you!

(Applause).